

REMARKS

This application includes a single claim, which has been amended as indicated above.

Reconsideration of this Application is respectfully requested in light of the foregoing amendments and the following remarks because entry of these amendments places the present application in condition for allowance, or in the alternative, better form for appeal. It is believed that the amended claim is fully supported by the specification as filed.

Drawing Objections

The outstanding Office Action objects to Figure 6 on the ground that it should be captioned as --Prior Art--.

Applicants request approval of a drawing change that would add the --Prior Art-- caption to Figure 6.

Accordingly, we respectfully submit that the drawing objection has been overcome.

Claim Objections

The Office Action also objects to Claim 1 under M.P.E.P. § 608.01(m) on the ground that reference characters corresponding to elements identified in the detailed description and/or drawings should be enclosed within parentheses when used in conjunction with the recitation of the same element or group of elements in the claims.

Claim 1 has been amended so that reference characters corresponding to reference numerals in the drawings are now enclosed in parentheses. As such, it is respectfully submitted that all the outstanding objections to the claim have been overcome and should now be withdrawn.

Rejection Under 35 U.S.C. § 102

Claim 1 presently stands rejected under 35 U.S.C. § 102(b) as being anticipated by the Lundquist patent (U.S. Patent No. 4,055,176).

The Lundquist patent discloses a universal drip chamber and spike assembly for use in dispensing intravenous liquids. The drip chamber 14 includes a body 12 formed of rigid, substantially transparent, material (see Col. 3, lines 6-8), and a booth 13 formed of a translucent, medical-quality, natural rubber material (see Col. 3, lines 27-29). At one end, the booth has a valve seat 46 including an annulus 47 and a conical recess 49 (see Col. 3, lines 55-65). The drip chamber encloses a ball-like valve member 51 formed of low density polyethylene – a material that will float in the intravenous liquid. Operation of the Lundquist patent assembly is described, in pertinent part, at Col. 6, lines 15-24:

During the time that the drip chamber 14 is being filled to the level 21, the ball remains seated within the valve seat 46 because it is gripped by the annulus 47. As soon as the drip chamber has been filled to the desired level, the lower portion of the drip chamber booth 13 can be squeezed by hand as shown in FIG. 1. This compresses the valve seat around the ball-like member and causes the ball to be ejected from the valve seat and to float on the surface of the liquid in the drip chamber 14.

By contrast, amended claim 1 recites a safety intravenous set in which a spherical ball for controlling a flow of Ringer's solution is provided in a transparent

barrier for confirming a flow of Ringer's solution, characterized in that the transparent barrier (10) of the intravenous set has a double-curved structure (11) at a lower portion thereof and a hemispherical setting portion (12) formed at a lower end thereof, and the spherical ball (20) has *an air layer* therein such that the spherical ball (20) rises smoothly by buoyancy while the Ringer's solution is initially introduced into the transparent barrier (10).

The Lundquist patent neither discloses nor suggests such features.

Comparing the present invention with Lundquist '176, the hemispherical setting portion 12 disclosed in the present invention is double-curved such that the spherical ball 20 is sealingly seated on the hemispherical setting portion 12 to prevent the Ringer's solution from flowing backward. But in Lundquist, the ball seats on the straight wall of a conical surface. Furthermore, when a patient is displaced, the spherical ball 20 of this invention is not entirely moved because the spherical ball 20 contacts the hemispherical setting 12 with a wider area. On the other hand, in Lundquist, the ball rests on a conical surface and requires the annulus 47 to hold it in place. Further, the hemispherical setting portion 12 and the spherical ball are aligned on the same axis when the spherical ball 20 is seated on the hemispherical setting portion 12.

In the Lundquist '176, when the Ringer's solution is supplied to the drip chamber 12, the ball 51 does not readily escape from the valve seat 46 due to a small volume of the ball float 51 in spite of buoyancy. In other words, in spite of the fact that the Ringer's solution is introduced into the drip chamber 12, the ball float 51 may be positioned at an outlet side of the drip chamber 12.

However, in the safety intravenous set of the present invention, the air layer of the spherical ball 20 allows the spherical ball 20 to float easily when the Ringer's solution is introduced into the transparent barrier 10.

Thus, amended claim 1 is not anticipated by the Lundquist patent. Moreover, we respectfully submit that amended claim 1 would not be obvious to one of ordinary skill in the art in view of the Lundquist patent. More particularly, the ball valve of the Lundquist patent is trapped during initial filling and must be physically dislodged according to the Lundquist specification. By contrast, the spherical ball of the present invention is constructed and arranged so that it readily floats as the liquid surrounds it. For at least these reasons, we respectfully submit that Claim 1 is patentable over Lundquist.

Conclusion

Applicant respectfully submits that the foregoing remarks demonstrate that entry of these amendments places the present application in condition for allowance, or in the alternative, better form for appeal. All stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: August 20, 2004

By: 

Regis E. Slutter

Registration No. 26,999

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620